## PATENT ASSIGNMENT

Electronic Version v1.1  
Stylesheet Version v1.1

### SUBMISSION TYPE:  
NEW ASSIGNMENT

### NATURE OF CONVEYANCE:  
ASSIGNMENT

### CONVEYING PARTY DATA

<table>
<thead>
<tr>
<th>Name</th>
<th>Execution Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ku-Feng YANG</td>
<td>11/11/2011</td>
</tr>
<tr>
<td>Tsang-Jiuh WU</td>
<td>11/11/2011</td>
</tr>
<tr>
<td>Yi-Hsiu CHEN</td>
<td>11/14/2011</td>
</tr>
<tr>
<td>Ebin LIAO</td>
<td>11/16/2011</td>
</tr>
<tr>
<td>Yuan-Hung LIU</td>
<td>11/14/2011</td>
</tr>
<tr>
<td>Wen-Chih CHIOU</td>
<td>11/14/2011</td>
</tr>
</tbody>
</table>

### RECEIVING PARTY DATA

Name: TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.  
Street Address: No. 8, Li-Hsin Rd. VI, Hsinchu Science Park  
City: Hsinchu  
State/Country: TAIWAN  
Postal Code: 300

### PROPERTY NUMBERS Total: 1

<table>
<thead>
<tr>
<th>Property Type</th>
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<tr>
<td>Application Number</td>
<td>13272506</td>
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### CORRESPONDENCE DATA

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Phone: 7036841111  
Email: tsmc@pfirm.com  
Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.

Correspondent Name: Lowe Hauptman Ham & Berner, LLP (TSMC)  
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Address Line 4: Alexandria, VIRGINIA 22314

### ATTORNEY DOCKET NUMBER:  
T5057-Y541

501749015  
PATENT  
REEL: 027353 FRAME: 0884
NAME OF SUBMITTER: Randy A. Noranbrock

Total Attachments: 2
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ASSIGNMENT

In consideration of the premises and other good and valuable consideration in hand paid, the receipt and sufficiency of which is hereby acknowledged, the undersigned,

1) Ku-Feng YANG  
2) Tsang-Jiuh WU  
3) Yi-Hsiu CHEN

4) Ebih LIAO  
5) Yuan-Hung LIU  
6) Wen-Chih CHIOU

who has made a certain new and useful invention, hereby sells, assigns and transfers unto

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD. having a place of business at No. 8, Li-Hsin Rd. VI, Hsinchu Science Park, Hsinchu 300, Taiwan R.O.C.

its successors and assigns (hereinafter designated "ASSIGNEE") the entire right, title and interest for the United States of America as defined in 35 U.S.C. 100 in the invention entitled

THROUGH SUBSTRATE VIA STRUCTURES AND METHODS OF FORMING THE SAME

(a) for which an application for United States Letters Patent was filed on 2011-10-13, and identified by United States Patent Application No. 13/272,506; or

(b) for which an application for United States Letters Patent was executed on __________.

and the undersigned hereby authorizes and requests the United States Commissioner of Patents and Trademarks to issue any and all United States Letters Patent which may be granted therefor and any and all extensions, divisions, reissues, continuations, or continuations-in-part thereof, and the right to all benefits under the International Convention for the Protection of Industrial Property to the said ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives; the undersigned agrees that the attorneys of record in said application shall hereafter act on behalf of said ASSIGNEE;

AND the undersigned hereby agrees to transfer a like interest, and to render all necessary assistance in making application for and obtaining original, divisional, reissued or extended Letters Patent of the United States, upon request of the said ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements, and applications for patent based thereon, growing out of or related to the said invention; and to execute any papers by the said ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

SIGNED on the date indicated aside my signature:

1) Ku-Feng Yang  
Name: Ku-Feng YANG  
Date: 2011.11.11

2) Tsang-Jiuh Wu  
Name: Tsang-Jiuh WU  
Date: 2011.11.11

3) Yi-Hsiu Chen  
Name: Yi-Hsiu CHEN  
Date: 2011.11.14
4) Ebin Liao
   Name: Ebin Liao

5) Yuan-Hung Liu
   Name: Yuan-Hung Liu

6) Wen-Chih Chioou
   Name: Wen-Chih CHIOU

Date:

11/14/11

11/18/11

11/14/11

Date: